IN THE CLAIMS

1) (Currently Amended) A composition useful in preparing melt spun textile fibers comprising a polyurethane polymer consisting essentially of the reaction product of monomers consisting essentially of ~~prepared from~~ at least one diisocyanate monomer and at least two diol monomers, a first diol monomer which is a member selected from the group consisting of a polyether diol, a polyester diol, ~~and~~ hydroxyl terminated polyether/polyester glycols and mixtures thereof; ~~a mixed polyether-polyester diol;~~ and a second diol monomer having a molecular weight of about 62 to about 118, said polyurethane having a molecular weight of about 200,000 and above, a tenacity of about 0.6 gm/denier and above, and an elongation of about 400% and above, wherein said first and second diol monomers are always reacted separately during preparation of the polyurethane polymer.

2) (Cancelled)

3) (Cancelled)

4) (Cancelled)

5) (Previously Presented) A composition according to claim 1 wherein the at least one diisocyanate monomer is a member selected from the group consisting of aliphatic monomers having terminal isocyanate groups, aromatic monomers having terminal isocyanate groups, mixtures of said aliphatic and aromatic monomers, mixtures of isomers of an aliphatic monomer having terminal isocyanate groups and mixtures of isomers of an aromatic monomer having terminal isocyanate groups.

6) (Original) A composition according to claim 5 wherein the at least one diisocyanate monomer is a member selected from the group consisting of 1, 6-hexane diisocyanate, toluene diisocyanate isomers and methylene bis (phenylisocyanate) isomers.

7) (Previously Presented) A composition according to claim 1 wherein the polyurethane polymer contains "hard" segments and "soft" segments, said segments arranged in an orderly fashion.

8) (Cancelled)

9) (Cancelled)

10) (Currently Amended) A process of preparing a polyurethane polymer fiber precursor, the precursor consisting of a polymer having a molecular weight of about 200,000 and above, a tenacity of about 0.6 grams/denier and above, and an elongation of about 400% and above, the process comprising the steps of:

a) obtaining a polyol prepolymer which is a member selected from the group consisting of hydroxyl terminated polyester glycols, hydroxyl terminated polyether glycols, hydroxyl terminated polyether/polyester glycols, and mixtures thereof;

b) adding a first organic diisocyanate to the polyol prepolymer wherein the mole ratio of isocyanate group to hydroxy group is about 1.2 to 1:1.1 to obtain a first mixture;

c) reacting the first mixture of first organic diisocyanate and polyol prepolymer at a temperature of about 60°C to about 100°C and at atmospheric pressure for a time of about 20 minutes to about 100 minutes to obtain a

"soft" polymer;

d) obtaining a C_2-C_6 glycol having terminal hydroxyl groups;

e) adding a second organic diisocyanate to the glycol wherein the mole ratio of isocyanate to hydroxyl is about 1:2 to about 1:1.2 to obtain a second mixture;

f) reacting the second mixture of second organic diisocyanate and C_2-C_6 glycol at a temperature of about 50°C to about 70°C and at atmospheric pressure for a time of about 2 minutes to about 10 minutes to obtain a "hard" polymer;

g) combining the "soft" polymer from (c) with the "hard" polymer from (f) in an extruder to obtain a combination of polymers wherein the mole ratio of isocyanate functionality to hydroxyl functionality in the combination is about 0.98:1 to about 1.2:1;

h) reacting the combination of polymers in the extruder at a temperature of about 125°C to about 260°C for a time of about 2 minutes to about 8 minutes and at atmospheric pressure to obtain a final polyurethane polymer; and

j) extruding the final polyurethane polymer to obtain a solid product of polyurethane polymer fiber precursor.

11) (Previously Presented) A process according to claim 10 further comprising the steps of:

k) pelletizing the solid product of polyurethane polymer fiber precursor;

l) melting the pelletized solid product; and

m) spinning the melted product to obtain a polyurethane polymer fiber.

12) (Cancelled)

13) (Cancelled)

14) (Cancelled)

15) (Cancelled)

16) (Cancelled)

17) (Original) A process according to claim 10 wherein the polyol prepolymer of step (a) is a liquid under standard conditions of temperature and pressure.

18) (Original) A process according to claim 10 wherein the first organic diisocyanate of step (b) and the second diisocyanate of step (e) are each a member selected from the group consisting of 1, 6-hexane diisocyanate, toluene diisocyanate isomers, and methylene bis (phenylisocyanate) isomers.

19) (Original) A process according to claim 10 wherein step (h) is conducted in the presence of a catalyst.

20) (Currently Amended) A process for preparing a polyurethane polymer fiber precursor, the precursor consisting of a polymer having a molecular weight of about 200,000 and above, a tenacity of about 0.6 grams/denier and above, and an elongation of about 400% and above, the process comprising the steps of:

(a) obtaining a polyol prepolymer which is a member selected from the group consisting of hydroxyl terminated polyester glycols, hydroxyl terminated

polyether glycols, hydroxyl terminated polyether/polyester glycols, and mixtures thereof;

(b) adding a first organic diisocyanate to the polyol prepolymer wherein the mole ratio of isocyanate to hydroxyl is about 1.2 to about 1:1.1 to obtain a first mixture;

(c) reacting the first mixture of first organic diisocyanate and polyol prepolymer at a temperature of about 60°C to about 100°C and at atmospheric pressure for a time of about 20 minutes to about 100 minutes to obtain a "soft" polymer;

(d) obtaining a C_2-C_6 glycol having terminal hydroxyl groups;

(e) obtaining a second organic diisocyanate;

(f) combining the "soft" polymer with the C_2-C_6 glycol of step (d) and the second organic diisocyanate of step (e) in a reaction extruder to obtain a combination of "soft" polymer, C_2-C_6 glycol and diisocyanate, wherein the mole ratio of isocyanate group to hydroxyl group is adjusted to approach 1:1, with the proviso that gel formation is avoided;

(g) reacting the combination of "soft" polymer, C_2-C_6 glycol and diisocyanate in the reaction extruder at a temperature of about 125°C to about 260°C for a time of about 2 minutes to about 8 minutes and at atmospheric pressure to obtain a final polyurethane polymer; and

(h) extruding the final polyurethane polymer to obtain a solid product of polyurethane polymer fiber precursor.

21) (Previously Presented) A process according to claim 20 further comprising the steps of:

(j) pelletizing the solid product of polyurethane polymer fiber precursor;

(k) melting the pelletized solid product; and

(l) spinning the melted product to obtain a polyurethane polymer fiber.

22) (Cancelled)

23) (Cancelled)

24) (Cancelled)

25) (Cancelled)

26) (Cancelled)

27) (Previously Presented) A process according to claim 20 wherein the polyol prepolymer of step (b) is a liquid under standard conditions of temperature and pressure.

28) (Original) A process according to claim 20 wherein the organic diisocyanate of step (b) is a member selected from the group consisting of 1, 6-hexane diisocyanate, toluene diisocyanate isomers, and methylene bis (phenylisocyanate) isomers.

29) (Previously Presented) A process according to claim 20 wherein step (g) is conducted in the presence of a catalyst.

30) (New) A polyurethane polymer fiber prepared according to a process consisting essentially of the following steps:

a) obtaining a polyol prepolymer which is a member

selected from the group consisting of hydroxyl terminated polyester glycols, hydroxyl terminated polyether glycols, hydroxyl terminated polyether/polyester glycols, and mixtures thereof;

b) adding first organic diisocyanate to the polyol prepolymer wherein the mole ratio of isocyanate group to hydroxy group is about 1.2 to 1:1.1 to obtain a first mixture;

c) reacting the first mixture of first organic diisocyanate and polyol prepolymer at a temperature of about 60°C to about 100°C and at atmospheric pressure for a time of about 20 minutes to about 100 minutes to obtain a "soft" polymer;

d) obtaining a C_2-C_6 glycol having terminal hydroxyl groups;

e) adding a second organic diisocyanate to the glycol wherein the mole ratio of isocyanate to hydroxyl is about 1:2 to about 1:1.2 to obtain a second mixture;

f) reacting the second mixture of second organic diisocyanate and C_2-C_6 glycol at a temperature of about 50°C to about 70°C and at atmospheric pressure for a

time of about 2 minutes to about 10 minutes to obtain a "hard" polymer;

g) combining the "soft" polymer from (c) with the "hard" polymer from (f) in an extruder to obtain a combination of polymers wherein the mole ratio of isocyanate functionality to hydroxyl functionality in the combination is about 0.98:1 to about 1.2:1;

h) reacting the combination of polymers in the extruder at a temperature of about 125°C to about 260°C for a time of about 2 minutes to about 8 minutes and at atmospheric pressure to obtain a final polyurethane polymer; and

j) extruding the final polyurethane polymer to obtain a solid product of polyurethane polymer fiber precursor.

k) pelletizing the solid product of polyurethane polymer fiber precursor;

l) melting the pelletized solid product; and

m) spinning the melted product to obtain a polyurethane polymer fiber.

31) (New) A polyurethane polymer fiber prepared according to a process consisting essentially of the following steps:

a. obtaining a polyol prepolymer which is a member selected from the group consisting of hydroxyl terminated polyester glycols, hydroxyl terminated polyether glycols, hydroxyl terminated polyether/polyester glycols, and mixtures thereof;

b. adding a first organic diisocyanate to the polyol prepolymer wherein the mole ratio of isocyanate to hydroxyl is about 1.2 to about 1:1.1 to obtain a first mixture;

c. reacting the first mixture of first organic diisocyanate and polyol prepolymer at a temperature of about 60°C to about 100°C and at atmospheric pressure for a time of about 20 minutes to about 100 minutes to obtain a "soft" polymer;

d. obtaining a C_2-C_6 glycol having terminal hydroxyl groups;

e. obtaining a second organic diisocyanate;

f. combining the "soft" polymer with the C_2-C_6 glycol of step (d) and the second organic diisocyanate of step (e)

in a reaction extruder to obtain a combination of "soft" polymer, C_2-C_6 glycol and diisocyanate, wherein the mole ratio of isocyanate group to hydroxyl group is adjusted to approach 1:1, with the proviso that gel formation is avoided;

g. reacting the combination of "soft" polymer, C_2-C_6 glycol and diisocyanate in the reaction extruder at a temperature of about 125°C to about 260°C for a time of about 2 minutes to about 8 minutes and at atmospheric pressure to obtain a final polyurethane polymer; and

h. extruding the final polyurethane polymer to obtain a solid product of polyurethane polymer fiber precursor;

j. pelletizing the solid product of polyurethane polymer fiber precursor;

k. melting the pelletized solid product; and

l. spinning the melted product to obtain a polyurethane polymer fiber.